

Name _____ Period _____ Date _____

Part A

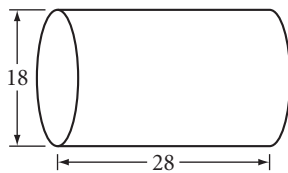
Complete each statement.

1. The _____ of a prism are the line segments where the lateral faces intersect.
2. A _____ is the set of all points in space at a given distance from a given point.
3. The altitude of a pyramid is a _____ segment from the _____ to the plane of the base.
4. An object's density is calculated by dividing the _____ of the object by its _____.

Part B

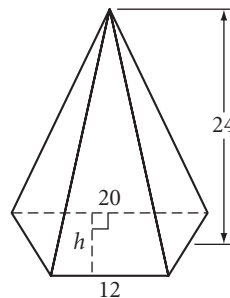
Find the volume of each solid. All given measurements are in centimeters. Round your answers to the nearest cm^3 . In Problem 2, the base is a trapezoid.

1. Volume = _____

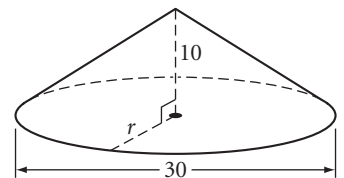


2. $h = 8$ cm

Volume = _____



3. Volume = _____

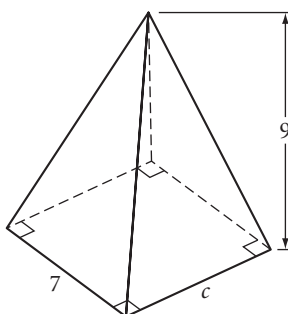


Part C

In Problems 1–3, all given measurements are in centimeters.

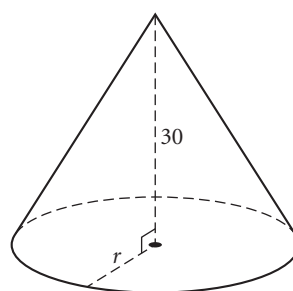
1. Volume = 195.3 cm^3

$c =$ _____



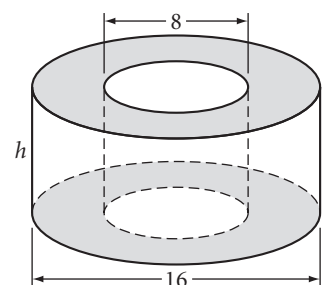
2. Volume = $2560\pi \text{ cm}^3$

$r =$ _____



3. Volume of region between cylinders = $336\pi \text{ cm}^3$

$h =$ _____



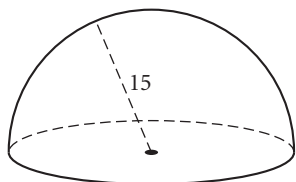
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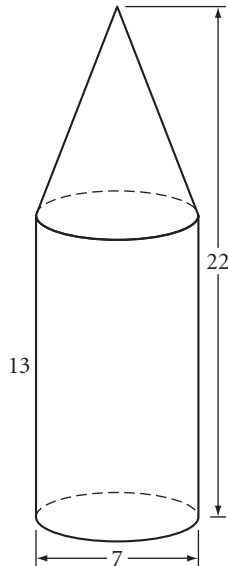
4. Find the volume of a cone with a diameter of 12 inches and a height of 15 inches.
5. A pyramid with an equilateral-triangle base has a volume of $48\sqrt{3} \text{ cm}^3$ and a height of 16 cm. Find the length of each side of the equilateral triangle.
6. The density of copper is 8.96 g/cm^3 . You have a solid copper cylinder with base radius 1 cm and height 3 cm. How much does it weigh? Round your answer to the nearest gram.

Part D

1. Find the volume and the surface area of the hemisphere (including the base). The radius is in centimeters.



2. Find the volume of the solid below. Measurements are in centimeters.



3. A scoop of ice cream, shaped like a sphere with diameter 6 cm, is placed in an ice cream cone with diameter 5 cm and height 10 cm. Is the cone big enough to hold all the ice cream if it melts? Explain.

(continued)

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Mixed Review

- What is the total surface of a right square pyramid with base side length 6 cm and height 4 cm?
- Use inductive reasoning to complete the table.

n	1	2	3	4	5	6	...	n	...	200
$f(n)$	41	38.5	36	33.5						

- In $\triangle ABC$, $AC = 32$ cm. Find the exact value for each distance.

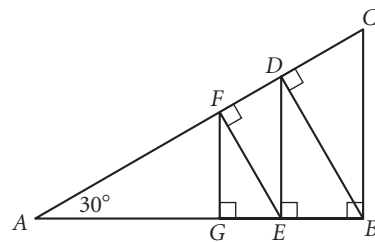
$BC = \underline{\hspace{2cm}}$

$BD = \underline{\hspace{2cm}}$

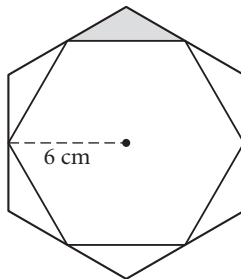
$DE = \underline{\hspace{2cm}}$

$EF = \underline{\hspace{2cm}}$

$FG = \underline{\hspace{2cm}}$



- Find the area of the shaded triangle. The vertices of the inner regular hexagon are the midpoints of the sides of the outer regular hexagon.



- In a tessellation, an equilateral triangle meets two congruent regular polygons to form a vertex. How many sides does each of the polygons have? Explain your reasoning.
- Write a paragraph proof or a flowchart proof for the conjecture:

The quadrilateral formed by connecting the midpoints of the sides of an isosceles trapezoid is a rhombus.

Given: Isosceles trapezoid $ABCD$ with $\overline{AB} \parallel \overline{CD}$ and midpoints P, Q, R, S

Show: $PQRS$ is a rhombus

